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### **Abstract**

A system for implementing multiple communication channels on a single twisted pair transmission line is disclosed. The system derives additional communication channels by way of a separate transceiver unit for each derived line. Each transceiver unit communicates in a separate predetermined frequency band. Each transceiver unit, upon connection to the transmission line, automatically utilizes the lowest unoccupied frequency band by monitoring each frequency band for the presence of signal power. Thus, as many derived lines as will be supported by the customer transmission loop can be readily added.